III. REMARKS REGARDING AMENDMENT

Product by process claim 14 has been amended to expressly require that the toner cartridge made by the claim 6 process have surfaces formed at and along a three dimensional, serpentine path the interfacing thermoplastic joining surfaces of the assembled cartridge from which it is made. It is believed that these requirements were inherent in claim 6 prior to the amendment and therefore do not represent any change in claim scope.

No new matter is added by this amendment.

IV. REPLY TO REJECTION MADE UNDER 35 §101

Claims 6 and 15-18 have been rejected under 35 U.S.C. § 101 as directed to non-statutory subject matter, allegedly because "computer programming and computer instructions" are non-statutory. It noted that no citation to any authority, such as the MPEP or a case holding from the United States Court of Appeals for the Federal Circuit or from the United States Supreme Court was provided in the Office Action. It is also noted that no specific claim language was identified as rendering the claims to be non-statutory. As shown below it appears that this rejection failed to take into account the analysis and determinations required by the above authority, and that the rejected claims clearly do meet the criteria for statutory subject matter under the guidelines provided in, for example, MPEP §2106 et seq.

According to the MPEP computer related functional and nonfunctional "descriptive material" may be non-statutory; however, if functional descriptive material is recorded on some computer-readable medium, it is most cases statutory because the use of the computer technology permits the function of the descriptive material to be realized.

In regard to the above rejection no specific language of any of the rejected claims was identified as being descriptive. Assuming, *arguendo* that the claim term "providing a computer processor operationally connected with said gimbal . . . of claim 6 and corresponding, similar language in claims 15-18 was intended, Applicant replies that:

1. All of these claims are classic "process" claims expressly permitted under 35 U.S.C. § 101, e.g., a process for disassembling a toner cartridge. The fact that one aspect of the process uses a computer-implemented step does not remove the claim from being statutory.
2. The language used in the claims is NOT descriptive; rather the language requires the affirmative step of providing a computer processor that is operationally connected and then also requiring specific additional computer-implemented steps.
3. Assuming, arguendo, that the terms in the rejected claims that contain the word "computer" are "descriptive", the claims nevertheless are statutory because the computer and related technology permit the disassembled cartridge to be made from an assembled or original toner cartridge.

For all of the above reasons, it is believed that the claims are statutory and that the rejection should be withdrawn.

V. REPLY TO REJECTION OF CLAIM 14 MADE UNDER 35 USC §102(b) or §103(a) OVER THE ARAKI '010 PATENT

Claim 14 has been rejected under 35 USC § 102(b) or 103(a) as anticipated by or obvious over US Patent 6,223,010 to Araki ("the '010 patent" or "Araki").

Applicant acknowledges that claim 14 is drawn to a product, both in its presently amended form as well as its pre-amended form. By the language of claim 14 prior to amendment, the claimed disassembled toner cartridge inherently had surfaces formed at the interfacing thermoplastic joining surfaces of the toner cartridge from which it was made because its parent claim 6 expressly required that the cartridge was disassembled by cutting through its thermoplastic joining surfaces. It is believed that the rejection should be withdrawn for this reason alone.

Nevertheless, claim 14 has been amended to expressly require the feature that Applicant believes was inherent, i.e., surfaces formed at the interfacing thermoplastic joining surfaces of the toner cartridge from which it was made.

With respect to this claim limitation, i.e., that the claimed disassembled toner cartridge has surfaces formed at the interfacing thermoplastic joining surfaces of the toner cartridge from which it was made, Araki fails to include such a feature. Because the process used in Araki fails to cut an assembled cartridge along its joining surfaces, once cut, the disassembled Araki toner cartridge necessarily does not have surfaces formed at the interfacing thermoplastic joining surfaces of the toner cartridge from which it was made. Thus, the claimed product has inherently different characteristics. Applicant further relies on the Declaration of Sagie Shanun, submitted under 37 CFR § 1.132 ("Shanun Decl.") to show that the product made by the claimed process is inherently different from the product made by the Araki process. See, Shanun Decl., at ¶¶ 17, 23-24.

In addition the Office Action has failed to reasonably interpret claim 14 by simply ignoring limitations that are unequivocally found in both versions of the claim, and has failed to establish prima facie obviousness by failing to cite and rely on any secondary reference.

For all of the above reasons it is requested that the rejection to claim 14 be withdrawn.

VI. REPLY TO REJECTION OF CLAIM 14 MADE UNDER 35 USC §102(b) or §103(a) OVER THE BALEY '794 PATENT

Claim 14 has been rejected under 35 USC § 102(b) or 103(a) as anticipated by or obvious over US Patent 5,676,794 to Baley ("the '794 patent" or "Baley").

Applicant acknowledges that claim 14 is drawn to a product, both in its presently amended form as well as its pre-amended form. By the language of claim 14 prior to amendment, the claimed disassembled toner cartridge inherently had surfaces formed at the interfacing thermoplastic joining surfaces of the toner cartridge from which it was made because its parent claim 6 expressly required that the cartridge was disassembled by cutting through its

thermoplastic joining surfaces. Furthermore, the requirements that the original, assembled cartridge have a plurality of interface line segments, that the thickness of each segment be determined, that the segments are cut by a computer controlled laser beam inherently results in a disassembled cartridge that is inherently different the disassembled cartridge produced by the blunt cutting along a single line of cutting, regardless of the thickness of the cartridge, in the Baley process. It is believed that the rejection should be withdrawn for this reason alone.

Nevertheless, claim 14 has been amended to expressly require that the claimed disassembled cartridge has surfaces formed from an assembled toner cartridge having interfacing thermoplastic joining surfaces along a three dimensional, serpentine path and that these surfaces are at the interfacing thermoplastic joining surfaces of the toner cartridge from which it was made. With respect to these claim limitations, Baley fails to include such features. Also, because the process used in Baley is simply a blunt, single line cutting with a saw blade, the resulting products cannot be the same. Applicant further relies on the Shanun Decl., ¶¶ 17-22, to show that the product made by the claimed process is inherently different from the product made by the Baley process.

Furthermore, the Office Action has failed to reasonably interpret claim 14, i.e., by simply ignoring limitations that are unequivocally found in both versions of the claim, and has failed to establish prima facie obviousness by failing to cite and rely on any secondary reference.

For all of the above reasons it is believed that the rejection should be withdrawn.

VII. REPLY TO REJECTION OF CLAIM 6 MADE UNDER 35 USC §103(a)

Claims 6 and 15-18 have been rejected under 35 USC §103(a) as being unpatentable over US Patent No. 6,223,010 to Araki (hereinafter referred to as "the '010 patent" or "Araki") in view of US Patent No. 6,609,044 to Basista et al (hereinafter referred to as "the '044 patent" or "Basista") and US Patent No. 4,549,066 to Piccioli et al (hereinafter referred to as "the '066 patent" or "Piccioli"). In reply Applicants will show that the claimed invention is not prima facie obvious from the cited references, and that, to the contrary, these references teach away from the invention as presently claimed.

A. Araki Teaches Away From the Claimed Invention

Araki does not disassemble the toner cartridge along interfacing thermoplastic jointing surfaces as claimed. See, Shanun Decl., at ¶¶ 23-24. Thus, Araki provides a strong teaching away from the claimed invention.

After the presently claimed process is completed, the toner cartridge sections remain with the cutting done along the joining surfaces of the original cartridge, and thus with surfaces at these locations. Because of the claimed process the resulting products are in a condition in which they can be re-joined together to meet OEM specifications, thus rendering the claimed process novel and non-obvious. Applicant relies on the Shanun Decl. to show the claimed process is non-obvious because it results in an unexpected result.

Araki teaches away from the presently claimed process. As expressly stated in Araki, in all embodiments of his process the cartridge components themselves are "melted and recycled as a resin material". See, Araki at 9:17-25[1]. Araki describes several embodiments, with each embodiment differing in the identity of the particular recyclable part(s) that are "easily taken out [of the disassembled cartridge] without being damaged" and differing in the specific technique for cutting the cartridge with a laser so that each such part can easily be removed. In Araki the ground-up cartridge material is used to make entirely new products, and likely for this reason there is no requirement in Araki regarding details of the cut, such as precision, specific depth and so forth, except that Araki avoids cutting the specific components that are to be recycled, per se. The nature of the cuts made in the Araki process renders re-assembly of the cartridges to be impossible. See, Shanun Decl., at ¶¶ 23-24. Thus, in Araki the focus is on reusing certain components contained in the cartridge; not on reusing the cartridge itself, and this focus necessarily means that the Araki process is directly contrary to the presently claimed process.

[1] While the present application refers to the two constituent parts, or components of a toner cartridge as the "toner section" and the "hopper section", Araki refers to these parts as the toner frame 12a and the cleaning frame 12b. See, Araki at 9:21-25. Also, Araki refers to a toner cartridge as a "process cartridge".

In Araki, the general approach to cutting the cartridge with a laser beam is to dispose between the laser beam and each pre-designated part that is, *per se*, to be recycled a "material layer difficult to cut by the laser". See, Araki Abstract, second sentence. The specific, easily removable and recycled parts are identified in the paragraph spanning columns 1-2 of Araki. In no Araki embodiment is the toner frame or hopper frame, *per se*, remanufactured, and thus his disassembly process ignores and fails to include many of the limitations of the presently claimed process. Thus, in the Araki process there is no incentive and no reason for precise cutting the cartridge along the joining surfaces of the original cartridge. However, such precise cutting is a major objective and is an important feature of the presently claimed process.

With respect to presently amended independent claim 6, Araki has no disclosure and no teaching of at least the following claim elements and limitations:

- Determining the thickness of each interface line segment;
- Removably retaining the toner cartridge in a gimbal;
- Providing a moveably adjustable light path;
- Controlling the laser, the gimbal and the light path by a computer program; and,
- Causing the laser beam to trace a path along each line segment at a speed determined by correlating the thickness of each interface line segment with the laser beam power.

B. Basista Teaches Away From the Claimed Invention

The secondary reference cited and relied on in the Office Action, Basista '044 teaches away from the presently claimed invention. Basista is not intended to cut cartridges. It is purely for two-dimensional cutting of material, and is primarily related to the methodology and software for cutting shapes out of a sheet to optimize the speed of cutting sheets. See, Shanun Decl., at ¶ 25. Not only does Basista not have any disclosure of the above bullet-pointed claim elements, it is directed and limited to cutting a single sheet of material. See, Basista Abstract, lines 1-3; and [1:10-15; 3: 5-10]. Thus, Basista is not even relevant to laser cutting of thermoplastic material,

cutting a plurality of interface line segments and is not relevant to any part of the toner cartridge repair or remanufacturing industry. There is no disclosure of determining the speed of a laser beam by correlating the thickness of each interface line segment of a thermoplastic material with the laser beam power. Thus, no matter how broadly claim 6 is interpreted, there is no reasonable basis to conclude that using Basista's computer cutting program for a sheet of metal could be a credible teaching, much less a reasonable teaching for modifying the Araki system and methods to yield the presently claimed inventions.

C. Piccioli Teaches Away From the Claimed Invention

The third reference cited and relied on in the Office Action, Piccioli '066 also teaches away from the claimed invention. Piccioli is limited to the original production of a blow-molded polyester container, and the removal of excess product; not to cutting into sections any container having interfacing thermoplastic joining surfaces. The Piccioli containers don't even have interface joining sections. Finally, Piccioli has no computer control, much less computer control of speed of travel of a laser beam by a method of correlating thickness of each interface line segment as required by claim 6. See, Shanun Decl., at ¶ 26. Thus, none of Piccioli's teachings is relevant to the issue of obviousness presently under consideration.

D. The Alleged Reason for Combining the Alleged Teaching of the Cited References Do Not Make Practical Sense and Are Contrary to the Reasonable Implications Flowing From Those References; and the Claimed Inventions are Unexpected and Surprising

The Office Action alleges that using the computer and cutting program of Basista in the Araki system would have been obvious to ensure cutting accuracy and decrease processing time, and that it would have been obvious to use a rotation device as taught by Piccioli in the Araki system because of enhanced product handling during the disassembly process.

In reply Applicants would point out even if the Basista computer and cutting program were used in the Araki system, and even if cutting accuracy were improved and processing time in the Araki system were reduced, it still would not have yielded the claimed process. For

example, Basista is concerned with optimizing the amount of time to perform required cuts in a piece of sheet metal in order to cut out a series of individual parts or shapes from the sheet in the most efficient way. In the present invention the starting material is not a sheet but rather is a finished, 3-dimensional product that presents only a single serpentine path for cutting. The concept of optimizing a path of cutting simply does not exist in regard to the present invention. Also, assuming, *arguendo*, that the Basista cutting program suggested, as a matter of cutting efficiency, to cut a cartridge along a path that was not along the joining surfaces, that would be directly contrary to the stated purpose and express language of claim 6. It simply would make no sense to efficiently cut a path through the cartridge and end up with cartridge sections that could not then be used for the intended purpose of re-joining them along the original joining surfaces in order to repair or remanufacture a toner cartridge that meets OEM specifications.

Similarly, assuming *arguendo* that a rotation device as taught by Piccioli was used in the Araki system, it is not true that "enhanced ease of product handling" would result. Furthermore, such use would not yield the claimed process. Simply put the Piccioli rotation device is not a gimbal, does not operate like a gimbal and would be of no use in the Araki system to yield toner cartridge sections that could thereafter be re-joined to make cartridges meeting OEM specifications. As expressly required by claim 6 the computer processor causes the laser beam to trace a path along each line segment by movably adjusting the light path and the gimbal. In other words, both the light path and the cartridge move. In Piccioli, only the product to be cut moves. The light path of the laser beam is focused and concentrated on a predetermined portion of the article and the article is rotated. Thus, such a cutting system and process, even if adapted to be included in the Araki toner cartridge process, is directly contrary to the invention of claim 6 for several reasons, namely in the claimed process both laser and the gimbal move at some point during the cutting process, and there is no fixed predetermined portion on the article to which the laser beam is focused. Rather, in the claimed invention the article has a plurality of portions, i.e., the plurality of interface line segments.

In addition to all of the above, Applicant asserts that the presently claimed process yield a surprising and unexpected result – a product that can be used to remanufacture toner cartridges to OEM specifications in a safe and economical fashion. Applicants further rely on the Shanun Decl. and the Declaration of Joy James ("James Decl.") to show that the claimed inventions are non-obvious. See, e.g., the Shanun Decl., at ¶¶ 27-28, and the Joy Decl., at ¶¶ 7-9. Both of these declarations explain the state of the art and provide opinions and testimony regarding the presently claimed inventions. For example, it is the process described in United States Patent 6,754,460 ("the '460 patent") to Lewis et al, that provides a good benchmark for the type and sophistication of the equipment used in the remanufacturing industry for disassembling toner cartridges. As shown in Lewis '460 and further explained in the Shanun Decl., Lewis is limited to use of a contact cutting tool that creates a much wider gap, uses up more cartridge material and results in a cut that is less attractive than the cut created by the presently claimed laser cutting process. Further more, the Lewis process is slower, has dust, debris and injury risks that are not found with the presently claimed laser cutting process.

For all of the above reasons the teachings of the individual cited references do not combine to render the claimed process obvious, and the rejection to claims 6 and 15-18 should be withdrawn.

VIII. REPLY TO REJECTION OF CLAIMS 7-9 MADE UNDER 35 USC §103(a)

Claims 7-9 have been rejected under 35 USC §103(a) as being unpatentable over US Patent 5,676,794 (hereinafter referred to as "the '794 patent" or "Baley") in view of Araki '010.

A. Assertions of Obviousness Made in the Office Action

With respect to independent claim 7, Baley has been cited as disclosing cutting a toner cartridge to a depth of about 3/16 of an inch and Araki has been cited as disclosing a method for cutting a toner cartridge with a laser. The Office Action alleges that it would have been obvious to use a laser as taught by Araki, presumably in the Baley system. The Office Action also alleges that the product of claim 7 is substantially similar to the Baley product, that it differs only

in the manner by which it has been made, and that in the absence of a showing that the claimed product is materially different from the Baley product, there is nothing in the record to show that the claimed product differs in kind from those obtained by the references.

In reply Applicants will show that the claimed product is materially different from the Baley product, and will do so by statements made in the prior art references, in the present application and in the testimony provided in the Shanun Decl., at ¶¶ 18-22.

B. The Product of Claim Independent 7 Is Materially Different From the Products Found in Baley and in Lewis; and Are Surprisingly and Unexpectedly Different

Baley describes a method and apparatus for reconditioning and resealing a toner cartridge that (i) has only linear interfacing joining sections; (ii) has no embedded electrical conductor; and (iii) results in sections that have rough, unattractive sections that are grossly inferior to the sections that are produced by the presently claimed process.

In Baley there is no serpentine path that is traced through three dimensions as is found in the cartridges from which the claim 7 cartridge sections are made. Thus, for this reason alone, the claimed product is materially different from the product in Baley.

Furthermore, the Baley method is limited to placing the cartridge on a table and then, with one or two circular saws, cutting through only two sides only of a toner cartridge. The toner cartridge shown in Baley is an old cartridge, and is not even welded together at the two ends. Sealing at the two ends is provided by seals 77. See, Baley at column 4, lines 23-32, and Figure 2.

Additionally, in Baley no electrical conductor or printed circuit board is shown passing through or very near the joining interfaces of the Baley cartridge. As explained in the Shanun Decl., at ¶¶ 18-19 the Baley process is directed to cutting toner cartridges that have linear joining surfaces; not cartridges that have joining surfaces extending in three dimensions, to which the presently claimed method are directed.

C. Claim Limitations Not Found in the Baley Toner Cartridge Sections

Claim 7 is independent and is directed to a disassembled toner cartridge that has characteristics or features that result from the precise method described in the application, and set forth in method claim 6, discussed above. In this regard there are several elements and limitations in presently amended claim 7 that are not found, expressly or by implication in either of the cited references. Thus, the toner cartridge sections that result from the Baley saw cutting process do not have:

Disassembled cartridge with thermoplastic joining surfaces adapted to achieve alignment and orientation necessary for proper operation

Electrical conductors required for proper function of the original toner cartridge and that are positioned adjacent the interface between joining surfaces of the toner cartridge remaining undamaged in the disassembled toner cartridge.

Thus, even if Araki's laser was used to cut Baley's cartridge, the resulting product would not be the product presently claimed. The presently claimed disassembled cartridge has electrical conductors embedded near the joining surfaces; the Baley disassembled cartridge does not. This difference is certainly a material difference because without these conductors it is not possible that the reassembled cartridge could operate properly.

For all of the above reasons it is requested that the rejection to claims 7-11 and 14 be withdrawn.

IX. REPLY TO REJECTION OF CLAIMS 10-11 MADE UNDER 35 USC §103(a)

Claims 10-11 have been rejected under 35 USC §103(a) as being unpatentable over Baley and Araki further in view of US Patent 6,864,294 to Koike et al ("the '010 patent" or "Koike"). Koike was cited for disclosing an ABS resin in an ink jet cartridge context and alleged to establish prima facie obviousness of the subject matter of claims 10-11.

In reply Applicant incorporates by reference all of the showings made above in reply to the rejection made to claim 7.

X. AUTHORIZATION TO CHARGE FEES

If any fees are due in regard to the present reply, authorization is hereby granted to charge Deposit Account 50-3725.

XI. CONCLUSION

For all of the above reasons it is requested that the rejections be withdrawn and that a Notice of Allowance of all pending claims be forthcoming.

Respectfully submitted,

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